



OSWER Innovations Pilot

University Food Waste Composting

The Office of Solid Waste and Emergency Response (OSWER) Assistant Administrator Marianne Horinko in December 2001 initiated a series of innovative pilots to test new ideas and strategies for environmental and public health protection to make OSWER programs more efficient, effective, and user-friendly. A small amount of money is set aside to fund creative proposals submitted by OSWER Headquarters and Regional employees. EPA employees are encouraged to talk to States, Tribes, local governments and external stakeholders about proposal ideas and partner on a project. The creative projects test approaches to waste minimization, energy recovery, recycling, and land revitalization that may be replicated across various sectors, industries, communities, and regions. We hope these pilots will pave the way for programmatic and policy recommendations by demonstrating the environmental and economic benefits of creative, innovative approaches to the difficult environmental challenges we face today.

BACKGROUND

The University of Colorado Department of Housing (CU Housing) maintains eight commercial kitchens that provide almost 8,000 meals daily. The total annual food waste, approximately 650 tons, represents about one third of CU Housing's total waste stream. Currently, about 95% of this food waste is disposed of in a landfill, with the remainder entering the city sanitary sewer. CU Housing spends approximately \$150,000 annually for trash removal services and an additional \$12,000 annually on soil amendments to increase turf health and reduce weeds.

In a landfill, food waste, along with other organic wastes, decomposes anaerobically to produce methane, a greenhouse gas. Landfill emissions of greenhouse gases amount to 10% of total greenhouse gas emissions.

Composting decomposes organic waste, such as food scraps and yard trimmings, with microorganisms (mainly bacteria and fungi), producing a humus-like substance. Knowing that food wastes can be composted and converted into nitrogen-rich soil amendment, the University was looking for a way to remove food wastes from the landfill and put them toward a more environmentally friendly purpose while reducing costs.

PILOT APPROACH

The University of Colorado, in partnership with U.S. EPA Region 8 and the City of Boulder, will address the waste diversion challenge faced by CU Housing and other food generators by determining the cost-effectiveness and practicality of an on-site, in-vessel composting technology. The in-vessel technology allows for a large volume of food waste to be composted in a relatively small area and with minimal, if any, odor. The Pilot will test the conversion of food waste into a safe and viable end-product by diverting all of the pre-consumer food wastes and a third of the post-consumer food waste into the on-site, in-vessel composting system. The City of Boulder also is interested in testing the in-vessel composting technology as a potential component to its planned municipal composting operation.

Other components of the Pilot include training operator and kitchen staff, expanding food waste diversion to other campus food generators, monitoring the collection and composting program, and conducting outreach about the success of the program.

INNOVATION

The Pilot will test an innovative, in-vessel composting technology that reclaims nutrients that would have been

cast away as trash. The technology has not yet been demonstrated with such a large volume of waste. The Pilot has great potential to lead to a large-scale municipal food collection program that could set a precedent for other urban food waste diversion programs.

BENEFITS

The Pilot will demonstrate an innovative model of closed-loop recycling and the cost-effective diversion of approximately 650 tons per year of food waste from the city's landfill. On-site composting capability could save the University almost \$50,000 annually. The Pilot will disseminate the results of the in-vessel composting technology testing to facilitate transfer to other organizations interested in solid waste diversion and in-vessel composting. This flexibility of the in-vessel makes the technology suitable for both urban and rural settings, which should make the technology very transferable to other food waste generators.

CONTACTS

Whitney Trulove-Cranor, EPA Region 8, 303-312-6099

Susan Wallace, University of Colorado, 303-735-3013

For additional information, visit the EPA OSWER Innovations web site at: www.epa.gov/oswer/IWG.htm